STEP BY STEP GUIDE

TO MANAGING THE RISK OF **USING DRONES**

REPUBLIC OF IRELAND

YOUR QUICK REFERENCE GUIDE TO THE PROCESS MANAGING THE RISK OF USING DRONES

Plan ahead

Understand your legislative obligations including:

- SUA Drones and Rockets Order S.I. 563 of 2015
- Create an asset register

Identify the risks

Consider:

- Breaches of legislation
- Reckless usage
- Untrained personnel
- Physical damage caused
- Third-party injury
- Privacy infringement
- Obstruction to airspace
- Flying in areas where they are not allowed

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Manage
the risks

Decide to:

- Terminate
- Treat
- Transfer
- Tolerate

Monitor
& review the risks

- Conduct site-specific risk assessments
- Ensure policies, procedures, guidance and training implemented
- Report all incidents

OUR MISSION

To build a world-class business that puts you at the centre of our organisation and society at the heart of our goals.

OUR VISION

As a mutual, we care about people. We understand that our progress is dependent on all our stakeholders, including our Members, staff, broker partners, clients and the community at large. We are committed to delivering innovative, world-class business practices underlined by our ethical approach and our clear vision.

OUR COMMITMENT

A sustainable business depends on meeting the needs of all stakeholders. Our continued success depends on meeting and beating our clients' expectations. This means recognising and rewarding local initiatives in building a better Ireland. In 2012 IPB Insurance announced its first social dividend focusing on Youth and Community, Education, Sport, Business Innovation and Diaspora. Over €8m has been allocated in social dividends since 2012, supporting over 360 projects.

CONTENTS

THIS IS THE START OF YOUR JOURNEY

We will guide you through the process of managing the risk of using drones.

CONTEXT

The use of drone technology has become more prevalent for land/ property surveys; therefore, prospective operators should be aware of their responsibilities to ensure operational safety.

Drones with accessories, such as smart cameras, specific sensors, detection equipment or radio frequency equipment, may be used to help in the inspection of cemeteries, buildings and disused lands or sites and possibly for other uses. The Irish Aviation Authority (IAA) classifies drones and model aircraft 'as unmanned aircraft that are remotely piloted/controlled'. IPB has developed this guide to help you manage the risk of using drones and to help develop a safer environment for you, your employees and members of the public during their use.

Drone-associated accidents and incidents can arise from their misuse or a lack of knowledge of applicable legislation or airspace restrictions. Drone registration is now mandatory as per the Small Unmanned Aircraft (SUA) Drones and Rockets Order S.I. 563 of 2015. It states that drones of 1kg or more and less than 25kg, without fuel but including any articles or equipment installed in or attached to the aircraft and including cargo at the start of its flight, must be registered. Unmanned aircrafts of 25kg or more are subject to a separate piece of legislation, namely the Irish Aviation Authority (Nationality and Registration of Aircraft) Order, 2015, and must be registered in a similar manner to manned aircraft. Information regarding aircraft registration is available at www.iaa.ie. In order to register a drone, the owner must first register with 'ASSET', the IAA's online terrain mapping system.

The Drones and Rockets Order S.I. 563 of 2015 recommends that training be undertaken by all drone operators. There is a mandatory requirement for training where the drone has a mass of 4kg-25kg or where a Specific Operating Permission (SOP) is being sought. An SOP is required by the 2015 Act when a drone is operated by a business or when the operator wishes to fly the drone outside the limits of the Act,

(i.e. if they wish to fly the drone closer than 120m to an assembly of 12 or more people not under their direct control). In order to get a specific operating permission, you must first attend a drone safety training course and produce a procedures manual that is acceptable to the IAA.

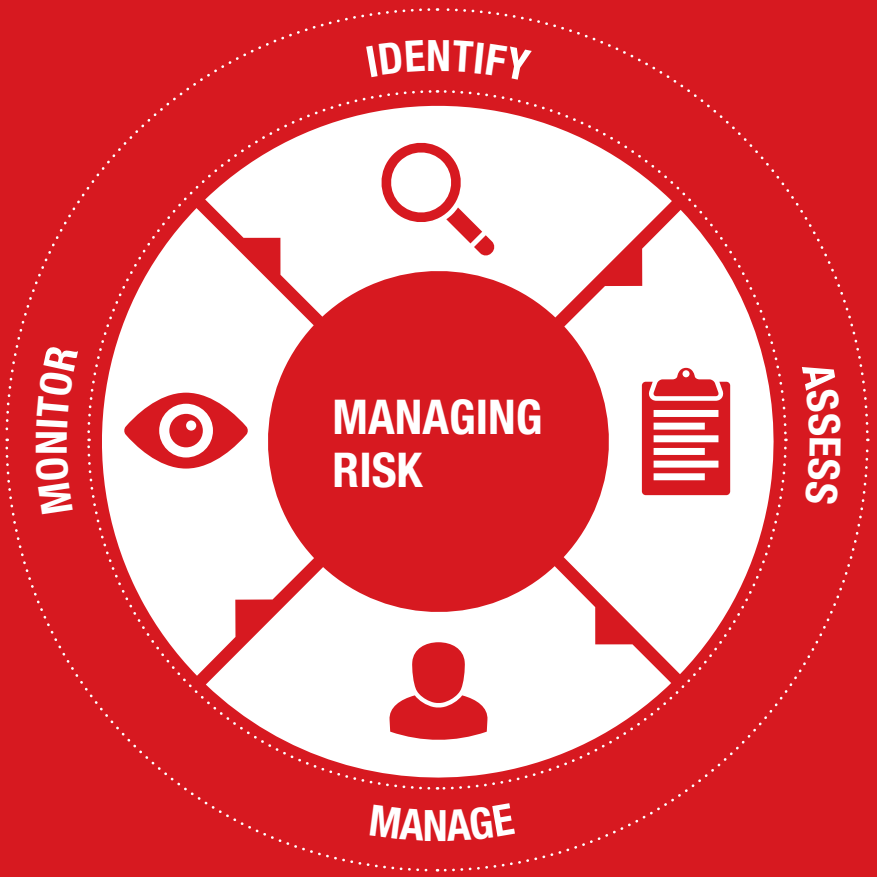
Section 7 (2) C of S.I. 563 of 2015 states that 'a person who has charge of the operation of a small unmanned aircraft 'drone' shall not permit that aircraft to be operated in a negligent or reckless manner so as to endanger life or cause damage to the property of others'. Before using a drone, it is therefore prudent to conduct a risk assessment that considers the operational safety of the proposed usage site. This includes the provision of a safe drone take-off and landing without undue hazard to people, property, other air space users or people in the general vicinity of the site.

Note: Throughout this guide 'drones' refers to a small unmanned aircraft (SUA) or a drone having a mass of 150kg or less.

ASSET REGISTER

An organisation should maintain an asset register of the drone information that is required to register it with the IAA as follows:

- Drone type
- Registration
- Mass (kg)
- Control frequency
- Length/wing rotor span
- Details of fail-safe system
- Accessories
- GPS location


IDENTIFY
ASSESS
MANAGE
MONITOR
MANAGING
RISK

MANAGING THE RISK OF USING DRONES

In order to effectively manage risk, a documented risk assessment should be undertaken and a risk management plan should be prepared. The process for managing risk can be broken down into the following four key steps.

Step 1. Identify the risks

Identifying the risks is the first step in a successful risk management process. To assist in identifying the risks associated with drones and to ensure legislative compliance, reference should be made to the SUA Drones and Rockets Order S.I. 563 of 2015, to the Safety, Health and Welfare at Work Act 2005 and the Safety, Health and Welfare at Work (General Application) Regulations 2007, and to any other associated regulations that are relevant to you. The key risks associated with drones may include:

Risks relating to the use of drone technology, such as:

- Negligent or reckless usage.
- Use by unregistered/untrained personnel.
- Physical damage caused by incorrect use/malfunction/failure.
- Obstruction to airspace.
- Third-party injury.
- Privacy infringement.
- Incorrect use of a camera, which may lead to criminal prosecution.
- Vulnerability to cyber attack.
- Release of any article from the aircraft.

Risks relating to the location of use, including:

- Restricted areas, including military installations and prisons.
- Within 30m of a person, vehicle, vessel or building not under the direct control of the operator.

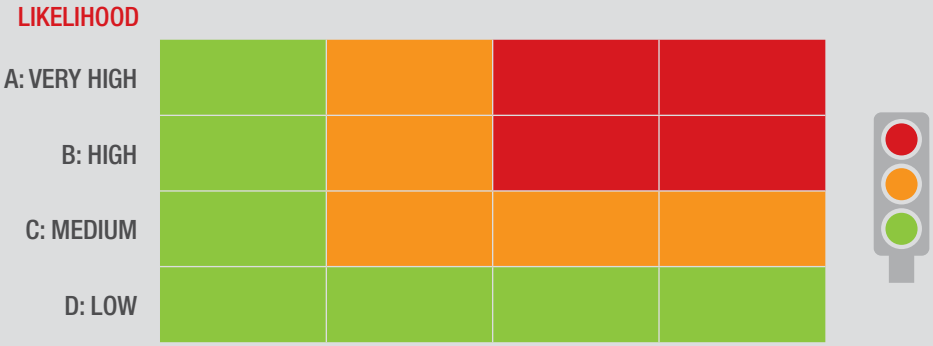
- Farther than 300m from or out of line of sight of the operator.
- Over an assembly of people.
- Over 120m above ground or water.
- Closer than 5km to an aerodrome.
- In civil or military-controlled aerospace.
- Without the landowner's permission.
- Inclement weather conditions.
- Where it will be a hazard to another aircraft in flight.
- Over urban areas.

Step 2: Assess the risks

The next step is to assess the likelihood of the risk occurring and the impact the risk would have if it did occur. It may be necessary to seek the input of a professional when carrying out the risk assessment. The likelihood of a risk occurring can be categorised as very high, high, medium or low. The impact of the risk may be categorised as severe (e.g. loss of control/impact with a person); major (e.g. loss of control/visibility/impact with a building); moderate (e.g. loss of control briefly without incident); or minor (e.g. minor deviation in flight path with no interruption to survey/operation). It is also important to consider the long-term consequences if the risk materialises.

Each assessed risk should be recorded in the appropriate box in the diagram opposite. Risks located in the red or high impact/likelihood box will require immediate attention, amber will require monitoring and green can be reviewed as appropriate.

ASSESS THE RISKS



1 = MINOR

2 = MODERATE
e.g. Physical damage to a stationary vehicle caused by malfunction of the drone.

3 = MAJOR
e.g. Filming of identifiable individuals without their permission, resulting in a criminal prosecution.

4 = SEVERE
e.g. Obstruction of civil-controlled aerospace resulting in an aircraft incident.


TERMINATE
TREAT
TRANSFER
TOLERATE
4 WAYS TO MANAGE RISK

Step 3: Manage the risks

There are four main ways to manage risk:

1 Terminate

Some risks may only be manageable by terminating the underlying activity or cause, e.g. by conducting a ground survey of the lands or avoiding the use of a drone.

2 Treat

The purpose here is to contain the risk at an appropriate level, e.g. by implementing a planned preventative maintenance programme and conducting a risk assessment ahead of each use of the drone.

3 Transfer

This entails taking measures to transfer a risk, or responsibility for a risk, to a third party. Risks may be transferred to reduce exposure of the organisation, employees or users of the drone. They may also be transferred because another organisation is more capable of managing it. An example would be entering into a contract to have a registered third-party specialist contractor conduct the drone survey. It is important to note that some risks are not fully transferable, e.g. reputational risks.

4 Tolerate

The impact of the risk may be tolerable and therefore may not require any further action to be taken. Even if it is not tolerable, it may not be possible to take any significant action against certain risks, or the cost of taking such action may be disproportionate to the benefits gained. In these circumstances the option may be to tolerate the existing level of risk.

The focus in managing drone risks should be on terminating the risk, if possible. Where this is not feasible, the approach should be to evaluate the effectiveness of existing management controls and strengthen them if necessary. Where required, new or additional management controls should be identified. Management controls should focus on the development and implementation of appropriate policies, procedures, guidance and training. The drone user must act in accordance with the limits as set out in the Act. Subsequent monitoring of compliance with the policy and enhanced supervision arrangements should be made so that risk is mitigated to as low a level as possible. Agreed management controls should be regularly tested to ensure that they support compliance with legislative requirements.

Managing data captured by drones

It is important to note that data captured may become personal data after capture if it is combined with other data; although camera systems are the most obvious use of drones, other sensors may record non-personal data that, when combined with other data, may identify individuals. For example, if radio data has been collected, operators should ensure that no equipment identifiers or radio content are stored alongside location data.

There are several practical steps drone operators can take to ensure that they comply with the Data Protection Acts 1988 and 2003, including:

- Carry out required assessments, including a risk assessment and a Privacy Impact Assessment (PIA) prior to using drones. The PIA should consider the people and organisations involved, the purpose of the operation, the type of drone and the combination of sensing technology used, identifying the risks to personal data protection, the necessary safeguards to address those risks, and the measurement and adjustment of those safeguards when in use.
- Put a written drone usage policy in place to include reference to the collection, processing, retention and security of personal data being processed.
- Ensure that you have the consent of the individuals whose personal data is to be captured by making timely use of notifications, signage, media, or publicity.

- Ensure that the drones are operated only with the sensor equipment necessary to achieve the purpose(s) for which they are intended, and only record the personal data required to achieve the purpose(s) intended and for which consent has been obtained. Similarly, only those images of the quality or resolution necessary should be captured. Where personal data is likely to also be captured by sensor equipment, operators should consider what other measures may be required to limit unnecessary capture and processing. This may entail using a lower resolution camera, only using still rather than video images, using a live stream rather than recording, or not using photographic imagery at all, for example if a heat or measurement survey is being undertaken.
- Have robust security and access controls in place, ensuring that only authorised people have access to the images.
- Ensure that any transfer of personal data is secured and is possible with the consent already obtained.
- Consider mechanisms that automatically blur faces when they are inadvertently filmed/recorded during data collection to ensure that unintended capture of personal data is avoided, or removed before further processing occurs.
- Use a software programme that automatically deletes the remaining personal data collected once the task is completed.
- Ensure that an appropriate contract is in place with any third-party security company.
- Train all camera operators to ensure that they comply with the relevant policies.

Transparency – Notice to the public

Individuals may not be aware that they are being recorded or that a drone is equipped with recording equipment. Under Section 2 (d) of the Data Protection Acts 1988 and 2003, it is necessary to do as much as possible to identify that recording is taking place, by whom, for what purpose and with whom the data may be shared. If necessary, the information should be made clear to the general public in the area in which the drone will operate by means of conspicuous signage, advertising posters, leaflet hand-outs, local newspaper and multi-channel/mode media campaigns and so on – whatever is necessary in order to ensure that individuals are adequately and clearly informed before and during the flight, and that valid consent has been obtained. The dates and times of the flights, the flight path and the types of personal data (e.g. imagery, radio, geometry, location etc.) that may be collected should be accurately described, along with the contact details of the operator and the data controller. Drones should be visible and visually identifiable.

Step 4: Monitor and review the risks

Organisations should designate specific drone operators and should register their commercial interest in SUAs with the IAA. Operators should be trained and registered with the IAA. It is important that a site-specific risk assessment be conducted ahead of the use of drones. Where hazards are identified (e.g. proximity of people/buildings/roadways, etc.), they should be graded according to the level of risk presented. The identified risk should be reported and appropriate action should be taken to minimise or control it.

Reporting incidents

A register of reported incidents associated with the use of drones should be maintained to assist in identifying trends so that appropriate management controls can be implemented.

INSURANCE REQUIREMENTS

Use of commercial drones

To make sure that your insurance cover is effective, you should notify IPB Insurance of the information listed under the asset register (e.g. drone application; authorised operator and proof of IAA registration). You should also notify IPB Insurance of any material fact that might affect the insurance risk.

IPB Insurance will extend the indemnity on its Public Liability policy provided that SUA activities are used only for educational and research purposes, risk assessment, photographic evidence and surveying work. The client must provide full details of SUAs and confirm compliance with the wIAA SOP registration process, including the following:

The remotely piloted aircraft shall:

- Be restricted in weight to a maximum weight of 20kg (excluding fuel but including articles or equipment installed or attached).
- Be restricted to activities related to educational, research, risk assessment, photographic evidence and surveying work.
- Exclude the operation of drones for military purposes.
- Comply with all relevant legislation and permits requirements.

The craft must be operated:

- In a manner that does not create collision hazards with any aircraft.
- Within a controlled airspace and not within 5 kilometres of the boundary of any aerodrome or heliport.
- Outside 150m of any person, vessel, vehicle or property structure not under the control of the aircraft operator; during take-off and landing, the aircraft must not be flown within 30m of any person, unless that person is under the control of the aircraft operator.
- Over unpopulated areas only, and the maximum operational height limit is 120m from ground level.
- In visual meteorological conditions only, which means:
  - No night flying (flights occur between the hours of sunrise and sunset), and;
  - No flying through or in cloud or fog.
- Only by operators who have completed and maintained training in accordance with Irish Aviation Authority requirements.

- Where operations include photography and/or surveillance, the Insured/operator must use reasonable endeavour to ensure that their activities do not breach Data Protection legislation.
- Within the visual line of sight of the operator at all times.

Note: IPB Insurance requires the client to provide full details of the craft and activities engaged in by the Insured. The Extension is designed to accommodate clients in line with the use as laid out in The Irish Aviation Authority Act, 1993 (No.24 of 1993) as amended by the IAA Small Unmanned Aircraft and Rockets Order 2015 and indemnity provided may be summarised as follows:

- Third Party Liability: IPB Insurance will indemnify the Insured in respect of their legal liability arising out of and in connection with the possession and use of remotely piloted aircraft upon full disclosure of all detail requested to IPB Insurance.
- First Party (Property) Cover: IPB Insurance will provide Fire and Perils including Theft cover on full disclosure to IPB Insurance. Please note that it is unlikely that we would provide any Accidental Damage cover in respect of the remote piloting of such craft and, depending on value, we may impose a specified excess.

On receipt of full details and any clarifications required, IPB Insurance will endorse your policy to extend the indemnity as set out. For existing cases for which the indemnity has already been provided, we would request that you confirm that there has been no material change in the equipment and activities undertaken.

CLAIMS

In the event that the use of a commercial drone causes property damage or a third-party bodily injury occurs, an incident/claim report must be notified to the organisation in respect of the incident.

The information received should then be passed immediately to the organisation's Insurance Officer, who will manage all communications between the organisation and IPB Insurance. An engineer's report, including photographs and/or video recording, should accompany the report of the claim.

Loss adjuster

If there is material damage caused by a drone to a building/structure, IPB Insurance may appoint a loss adjuster to assist with managing the claim. A loss adjuster is an insurance industry professional employed to assist in the valuation and settlement of a claim.

The loss adjuster will:

- Contact the client to arrange an inspection of the damaged building/structure.
- Undertake an assessment of the damage, including identification of the proximate cause.
- Provide a value for the damage sustained.
- Identify where there is third-party contribution to the claim.
- Ensure that all policy conditions are met.
- Assess the level of insurance covered by the policy.
- Advise on the cover available to help with the cost of finding alternative accommodation where relevant/appropriate.
- Act independently and impartially in the assessment of policy cover and calculation of the claim settlement.
- Adjust the claim once submitted.

RESOURCES AND REFERENCES

Ireland – Commercial use of drones in Ireland
(Published by DAC Beachcroft – dated 29th February 2016).

Lloyds Emerging Risk Report – Innovation Series 'drones take flight' (2015).

Statutory Instrument S.I. No. 25 of 2000 Irish Aviation Authority
(Rockets and Small Aircraft) Order, 2000.

Statutory Instrument S.I. No. 107 of 2015 Irish Aviation Authority
(Nationality and Registration of Aircraft) Order, 2015.

Statutory Instrument S.I. No. 563 of 2015 Irish Aviation Authority
(Small unmanned Aircraft (Drones) and Rockets Order, 2015.

The Operation of Remotely Piloted Aircraft Systems (RPAS) in Irish Airspace
(NR O.63; Issue 4; Date 23.07.15).

www.dataprotection.ie/docs/Guidance-on-the-use-of-Drone-Aircraft/1510.htm

www.iaa.ie/general-aviation/drones

www.ipb.ie

www.irishstatutebook.ie

APPENDIX 1

Information required for IAA Specific Operating Permission (SOP) U.F. 100 Form

Application for		
Initial Issue ☐	Renewal ☐	Variation ☐

Section 1: Applicant Company Details	
Name of Business or Trading Name(s)	
Company CRO Number	
Company Address (Exactly as CRO certificate)	

Section 2: Identity of Management Personnel
The operator must be capable of exercising operational control and supervision over any flight operated under the terms of this Specific Operating Permission. The nominated personnel listed below may be responsible for more than one area according to the scope of the operation.

1. The Accountable Manager (Overall Financial Responsibility)	
Surname	
Forename	
Mobile No.	
Email address	

2. The Safety Manager	
Surname	
Forename	
Mobile No.	

Email address	

3. The Nominated Flight Operations Manager/Chief SUA Pilot	
Surname	
Forename	
Mobile No.	
Email address	

Section 3: Proposed Operations
This part of the form provides very brief information on the nature of the proposed operations. More detailed information should be provided in the Operations Manual(s). The applicant Company for an **SUA Specific Operating Permission** will need to demonstrate competence, procedures and resources to the IAA or an IAA Authorised Examiner for the level of proposed operations.

Level	Description	Documented procedures (including limits)	Company has demonstrated operational competence	Date	Examiner initials
1	Uncontrolled Airspace and Uncongested Areas. (Operations outside of CTR boundaries and away from built up areas)				
2	Uncontrolled Airspace and Congested Areas. (Operations outside CTR boundaries but within the confines of a built up area.)				
3	Controlled Airspace and Uncongested Areas. (Operations inside any CTR but are away from built up areas)				

Level	Description	Documented procedures (including limits)	Company has demonstrated operational competence	Date	Examiner initials
4	Controlled Airspace & Congested Areas. (Operations inside any CTR and also within the confines of a built up area)				
Procedural Limits (Actual Limits and Risk Assessments must be documented in Operations Manual)					
5	Distances of less than 30 metres from a person, vessel, vehicle or structure				
6	Distances of less than 120 metres from large assemblies of persons of 12 or more				
7	Beyond direct unaided visual line of sight				
8	Beyond 300 metres from the point of operation				
9	At heights of more than 120 metres above the ground or water				
10	Carriage and release of articles				

NOTE: The Certifying Examiner shall only (Tick) the appropriate section after the applicant company has demonstrated complete competence and robust and appropriate procedures and risk assessment capabilities are in place. This section reflects the capabilities of the applicant company to conduct operations safely.

Section 4: List of Applicant Company SUA Aircraft

Type	Registration	Mass (kg)	Control frequency	Length	Wing/rotor span (m)	Details of fail safe/ auto-recovery system

Section 5: IAA Inspector/Authorised Examiner Signature Block

The applicant company operations manual has been reviewed and found to be satisfactory in all respects of the SUA operations proposed in Section 3 of this form	
The management personnel for each of the functions in Section 2 of this form have been found competent to undertake duties in the proposed operations	
The applicant has nominated a sufficient number of qualified SUA pilots and support personnel for the proposed operations	
I recommend the issue of an SUA Specific Operating Permission to the applicant company/person for the operations nominated in Section 3 of this form	
Examiner/Inspector Name	
Date	

Section 6: Applicant Company Signature and Privacy Statement

I hereby apply for the grant of an SUA Specific Operating Permission for the operations nominated in Sections 3 and 4 of this form and I understand that the IAA may publish the details of such Specific Operating Permission on its website.

Accountable Manager (Name)	
Signature	
Date	

Section 7: Submission Notes

The following documents/information must be supplied in support of each application:

- A copy of the Applicant Company's Operations Manual
- A copy of the SUA Manufacturer's Instructions, Operating Handbook, etc
- Certificate of design and construction (where available)
- Operator insurance details covering proposed operations
- The applicable application fee

Submission of Application:

- All applications are to be submitted in PDF form only to: rpas.fod@iaa.ie
  Please note – applications in any other format shall not be considered
- A minimum of 30 working days will normally be required to check and confirm the information submitted: where information is missing or omitted this process may take considerably longer. The IAA accepts no responsibility for any delay incurred in processing such an application.

APPENDIX 2

Pre-use inspection checklist for Small Unmanned Aircraft (SUA)

Action required	Yes	No	Provide an explanation, if necessary	Any other comment(s)
Has a risk assessment been conducted? Taking into account the hazard of mechanical failure?				
Has the drone been registered with ASSET?				
Has the U.F. 100 – Application form for a specific operating permission to operate Small Unmanned Aircraft (SUA) been submitted and approved by the IAA?				
Has the operator received training on the use of the equipment?				
Is there adequate insurance cover in place?				
Has data been recorded/ generated that may be requested under the Freedom of Information Act?				
Has a pre-flight check been conducted to ensure that the SUA/drone is in mechanically good condition?				

Action required	Yes	No	Provide an explanation, if necessary	Any other comment(s)
Has the wind speed been checked?				
Is the work site free of third-party personnel or hazards?				
Are emergency contact details documented and is there an emergency plan in place?				

Note: This checklist must be completed ahead of the use of Small Unmanned Aircraft (SUA) 'Drones'.

The organisation's Insurance Officer should retain a copy of this checklist.

DRONE0616V1

Designed by **FUDGE Creative** | fudgecreative.ie

WORKING TO MAKE A DIFFERENCE

IPB Insurance
1 Grand Canal Square
Grand Canal Harbour
Dublin 2, Ireland

Tel: +353 1 639 5500
Fax: +353 1 639 5510
Email: info@ipb.ie
www.ipb.ie